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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,857	02/14/2002	Atsushi Umeda	111969	6327

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EXAMINER

PHAM, LEDA T

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 06/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,857

Applicant(s)

UMEDA, ATSUSHI

Examiner

Leda T. Pham

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to Amendment filed on 2/6/03.
2. Claims 2 - 14 are presented for examination.

In view of amendment, the examiner withdraws the objections to the drawing, the abstract, and claim 8.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6, 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In those claims, "output ends of said delta connection winding are distributed at an end surface of said stator core in an angular range that is more than 180 degrees" is indefinite because "180 degrees" does not clearly tell an electrical degrees or mechanical degrees. Furthermore, how does the angle define? In light of drawing and as discussed during the personal interview, it is understood as a mechanical angle wherein the angle defined at the output ends respected to the center of the stator core.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 6 – 7, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Slavik et al. (U.S. Patent No. 5,686,774) in view of Takehara (U.S. Patent No. 5,270,602).

Referring to claim 6, Slavik teaches a rotary electric machine (figure 3) including a stator core an armature winding mounted in said stator core, wherein said armature winding comprising a plurality of three-phase windings, one of which is a Δ -connection winding (46) having output ends that are connected in series with respective phase-winding of another three-phase winding (48). However, Slavik does not teach said output ends of said Δ -connection winding are distributed at an end surface of said stator core in an angular range that is more than 180 degrees.

Takehara teaches a rotary electric machine having Δ -connection winding (figure 2, 3) wherein Δ -connection winding having output ends (p, q, r) are distributed at an end surface of said stator core in an angular range that is more than 180 mechanical degrees (figure 5) to produce a higher output torque.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the winding of the Δ -connection winding in a rotary electric machine as taught by Takehara. Doing so would produce a higher output torque.

Referring to claim 2, Slavik teaches said plurality of three-phase windings is mounted in said stator core (column 1, lines 20 – 21) so that the phase of current flowing in one phase winding is $\pi/6$ radian in electric angle different from the phase of current flowing in another phase-winding (column 3, lines 25 – 28).

Referring to claim 7, Takehara teaches the rotary electric machine further comprising lead wires that form output ends of said plurality of three-phase windings, wherein said lead wires are extended in radial directions so that they do not overlap one another (figure 2).

Referring to claim 14, Takehara teaches the rotary electric machine further comprising a plurality of lead wires extending in an arc from said Δ -connection winding along an axial end of said stator core at radially inner portion thereof to connect said output ends (figure 2).

7. Claims 4 – 5, 8 – 10, and 12 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slavik and Takehara as applied to claim 1 above, and further in view of Umeda et al. (U.S. Patent No. 5,936,326).

Referring to claim 4, the combination of Slavik and Takehara discloses the claimed invention, except for the added limitations of the armature winding comprising a plurality of electric conductors welded together.

Umeda discloses in figure 6, 9 and 12 the armature winding having a plurality of electric conductors welded together to form a winding on the stator core.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the armature winding having the electric conductors welded together as taught by Umeda for forming a winding on the stator core.

Referring to claim 5, Umeda teaches the rotary electric machine wherein each of said electric conductors has a rectangular cross-section (figure 8, and figure 11).

Referring to claim 8, Umeda teaches the rotary electric machine (figure 1) further comprising a rectifier unit (5) for rectifying voltages induced in said armature winding, wherein

said another three-phase winding has other output ends that are connected to said rectifier unit (column 6, lines 11- 16).

Referring to claim 9, the combination of Slavik and Takehara references teaches the claim invention, except for the added limitation of the rotary electric machine comprising a stator including a stator core and three-phase armature winding mounted in the stator core, a rotor having a plurality of magnetic poles, and a rectifier unit.

Umeda in figure 1 disclose a rotary electric machine comprising a stator including a stator core (2) and three-phase armature winding mounted in the stator core, a rotor (3) having a plurality of magnetic poles, and a rectifier unit (5) to provide an alternator for a vehicle such as a passenger automotive vehicle or a truck.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the structure of the combination of Slavik and Takehara rotary electric machine with clearly describe the stator, rotor, and rectifier as taught by Umeda.

Doing so would provide an alternator for a vehicle such as a passenger automotive vehicle or a truck.

Referring to claim 10, Slavik teaches the rotary electric machine wherein said first and second phase-windings are mounted in said stator core so that the phase of current flowing in said first phase-windings is $\pi/6$ radian in electric angle different from the phase of current flowing in said second phase windings (column 3, lines 25 - 28).

Referring to claim 12, Umeda teaches the rotary electric machine wherein each of said first and second phase-windings comprises a plurality of U-shaped conductor segments (figure 7, 10).

Referring to claim 13, Umeda teaches the rotary electric machine wherein each of said U-shaped conductor segments has a rectangular cross-section (figure 8, 11).

8. Claims 3, and claim 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slavik and Takehara as applied to claim 1 and claim 9 above, and further in view of Auinger (U.S. Patent No. 4,144,470).

Referring to claim 3 and claim 11, the combination of Slavik and Takehara teaches the claimed invention, except for the added limitations of each of said plurality of phase-windings has approximately the same number of turns.

Auinger teaches the phase-windings in an improvement having approximately the same number of turns (lines 31 – 43, column 25) for designing the phase winding.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the phase windings in the rotary electric machine have the same number of turns as taught by Auinger for designing the phase winding.

Response to Arguments

9. New drawing (figure 6) has been entered.
10. New abstract has been entered.
11. Claim 1 has been canceled and claim 14 has been entered.
12. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Leda T. Pham
Examiner
Art Unit 2834

LTP
June 8, 2003

